

REMARKS

The final Office Action mailed June 23, 2010, has been received and carefully considered.

Applicants respectfully draw the Examiner's attention to the Office Action Summary page which incorrectly shows (1) that Applicants filed a paper on June 16, 2010, (2) that claims 1-16 are pending, and (3) that claims 1-8 have been withdrawn. Applicants' last paper was filed May 17, 2010, as verified in Public PAIR. Further, since claims 1-4 were cancelled in the Preliminary Amendment filed December 30, 2004, and since claims 5-8 were cancelled in the Amendment filed July 7, 2009, only claims 9-16 are pending. Correction of the record at the next opportunity is respectfully requested.

Applicants thank the Examiner for his detailed analysis and comments regarding Applicants' arguments presented in the Amendment filed May 17, 2010. Applicants have responded to the Examiner's positions in the following.

Claims 9-16 are pending in the Application and are submitted to be in allowable condition for the reasons given in the following. Claims 9 and 13 are independent.

I. The continuing rejection of claims 9-16 under 35 U.S.C. §103(a) as unpatentably obvious over Kobayashi et al. (GB 2,349,388, hereinafter "Kobayashi") in view of Nambe (US 5,506,357) is respectfully traversed.

II. The continuing rejection of claims 9, 11, 13, and 15 under 35 U.S.C. §103(a) as unpatentably obvious over Kobayashi (GB 2,349,388) in view of Tang et al. (US 4,769,292, hereinafter "Tang") is respectfully traversed.

The Present Invention

The primary reference, Kobayashi et al., is Applicants' earlier Application. In the present invention as demonstrated in the comparative test results presented on pages 9-13 of the Specification and summarized in Table 1 on page 13, Applicants have achieved a blue color filter that exhibits a high contrast value "because the colorants are completely dissolved in the binder and hence the transparency is high" (see the last full paragraph on page 13). These advantageous results were not obtained in Applicants' earlier Application where the colorants were pigments that were dispersed in a binder.

Example 1-3 according to the invention were prepared using addition of materials (see for example, Example 1, page 10, lines 3-9), during which the colorants were completely dissolved in the binder resin. In contrast, the color filter of the comparative example, in which a pigment was dispersed in a binder, scattering was prone to occur in the color filters and at interfaces and the contrast value was shown to be lower.

Thus, while blue color filters can be made by conventional pigment dispersion as described on page 7, lines 1-11, of Applicants' Specification, Applicants have limited the pending claims to blue color filters made by addition of materials, as in working Examples 1-3, to obtain blue color filters having colorants completely dissolved in the binder resin and the advantages obtained thereby.

The present invention provides a blue color filter suitable for an organic EL display for which the purity of the blue color and the transmissivity are high and also the contrast is good.

Discussion of the Examiner's Positions:

The Examiner acknowledges several features missing in the disclosure of the primary reference, Kobayashi, but considers that the disclosures of Nambe or Tang supply these features and that sufficient motivation exists for combining the disclosures. The Examiner has dismissed/rebutted Applicants' arguments to the contrary.

The previous Amendments of record in the Application discussed the features of each of these prior art references, alone and in the combinations employed by the Examiner, which discussions are incorporated herein by reference for the sake of brevity.

Kobayashi - The Examiner acknowledges that the second colorant of Kobayashi's formula (2) differs in two ways. First, it includes only alkyl substitution in the Y-position of the ring while the Y-position of the ring of formula (2) in the present invention is occupied by a sulfur atom (claims 9-12) or an oxygen atom (claims 13-16). Second, no anion is disclosed (see the last paragraph on page 3 of the Action).

Applicants consider that a ring system with an alkyl group in the Y-position, as in Kobayashi, is essentially different in structure, stereochemistry, and expected properties compared to Applicants' heterocyclic ring system.

Nambe - The Examiner acknowledges that Nambe is from a different field of endeavor, but the Examiner consider that Nambe demonstrates that cyanine dyes with sulfur or oxygen in the Y-

position, like Applicants' second colorant, were known at the time the present invention was made and were generally coupled with anions. The Examiner considers that an artisan seeking to improve the blue color filter of Kobayashi would look for analogous dye structures with known parent ring systems and find them in Nambe so that motivation for combining these disclosures exists and involves mere substitution with a reasonable expectation of success.

Applicants respectfully disagree. Applicants consider that a ring system with an alkyl group in the Y-position, as in Kobayashi, is essentially different in structure, stereochemistry, and expected properties compared to Applicants' heterocyclic ring system so that the heterocyclic structures of Nambe are not analogous to the cyclic structures of Kobayashi and one of ordinary skill in this art would not be motivated to combine these disclosures as a matter of mere substitution with a reasonable expectation of success, particularly since Nambe relates to a different field of endeavor.

Tang – The Examiner considers that the heterocyclic cyanine based colorants of Tang read on Applicant's second colorant.

Applicants consider that a ring system with an alkyl group in the Y-position, as in Kobayashi, is essentially different in structure, stereochemistry, and expected properties compared to Applicants' heterocyclic ring system so that the heterocyclic structures of Tang are not analogous to the cyclic structures of Kobayashi and one of ordinary skill in this art would not be motivated to combine these disclosures as a matter of mere substitution with a reasonable expectation of success.

Thus, Applicants traverse the combination of Kobayashi with the secondary references, Nambe and Tang, on the basis that one of ordinary skill in this art would not think to modify the alkyl substitution in the Y-position of the ring of Kobayashi with the heterocyclic cyanine dyes with sulfur or oxygen in the Y-position of the ring of Nambe or Tang because an artisan would reasonably expect heterocyclic materials to have different stereochemistry and different properties so that only hindsight enabled the combination of references.

On page 13 of this Action, the Examiner disagrees that selection of the materials of Nambe or Tang is based on hindsight, because the heterocyclic cyanines of Nambe and Tang have known parent ring systems. Known or not, the ring systems of Nambe and Tang are heterocyclic ring systems and Kobayashi does not teach a second colorant with a heterocyclic ring system so that Applicants respectfully submit that the Examiner's "mere substitution

position” is a leap of logic.

Kobayashi v. Nambe or Tang - The Examiner acknowledges that Kobayashi et al., Nambe, and Tang fail to mention that the first and second colorants completely dissolve in the binder resin. However, the Examiner dismisses this feature as “inherent” in the colorants since the Examiner considers that the same materials are used particularly the cyanines of Tang which read on our second colorants.

However, Applicants are traversing the substitution of the second colorant of Kobayashi, which is not a heterocyclic ring system, with the colorants of Nambe and Tang which are heterocyclic ring systems. Applicants’ traversal is made on the basis that these essentially different ring systems differ in structure, stereochemistry, and expected properties compared to heterocyclic ring system so that the heterocyclic structures of Nambe and Tang are not analogous to the cyclic structures of Kobayashi and one of ordinary skill in this art would not be motivated to combine these disclosures as a matter of mere substitution with a reasonable expectation of success, particularly since Nambe relates to a different field of endeavor.

Bridging pages 13 and 14 of this Action, the Examiner considers that Kobayashi’s method of dispersing the colorants is the same method as employed in the present Application (page 7) and achieves the same results.

In the discussion of the present invention bridging pages 6 and 7 hereinabove, Applicants have explained that, while blue color filters can be made by conventional pigment dispersion as described on page 7, lines 1-11, of Applicants’ Specification, Applicants have limited the pending claims to blue color filters made by addition of materials, as in working Examples 1-3, to obtain blue color filters having colorants completely dissolved in the binder resin and the advantages obtained thereby.

The Examiner takes the additional position that since Kobayashi/Nambe, Kobayashi/Tang, and Applicants use “similar pigments”, the pigments used by Kobayashi/Nambe and Kobayashi/Tang would also be expected to be completely soluble and meet Applicants’ claims.

Applicants respectfully submit that there is no teaching or suggestion in Applicants’ earlier Kobayashi Application of the desirability of completely dissolving colorants in a binder resin, as the Examiner acknowledges. Applicants have achieved a blue color filter that exhibits a high contrast value “because the colorants are completely dissolved in the binder and hence the transparency is high” (see the last full paragraph on page 13). These advantageous results

were not obtained in Applicants' earlier Application where the colorants were pigments that were dispersed in a binder.

For the reasons given above, Applicants believe that the combination of the disclosures of Kobayashi and Nambe or Kobayashi and Tang have not been fairly made in view of the essential differences between Kobayashi's ring system and the heterocyclic ring systems of Nambe and Tang. In view of this, Applicants submit that no *prima facie* cases of obviousness have been made out and these grounds of rejection should be withdrawn.

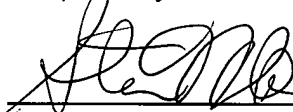
CONCLUSION

In view of the foregoing remarks, Applicants submit that claims 9-16 and the Application are in condition for allowance. Reconsideration and passage of this case to issue are therefore requested.

Should the Examiner consider that a conference would help to expedite the prosecution of this Application, the Examiner is invited to contact the undersigned to arrange for such an interview.

No fee is believed due. If any fee is deemed due, the Commissioner is hereby authorized to charge the same to our Deposit Account No, 18-0002 and is requested to advise us accordingly.

Respectfully submitted,



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Date

SMR/AJW:ac